Claim 1 recites "[a] process for producing pellet of ethylene-vinyl alcohol copolymer comprising the steps of: introducing into a vessel an ethylene-vinylalcohol copolymer solution containing 50 parts by weight or more of alcohol having a boiling point of 100°C or less with respect to 100 parts by weight of an ethylene-vinylalcohol copolymer, contacting the solution with water vapor in said vessel to let out said alcohol with water vapor and then letting out from said vessel an ethylene-vinylalcohol copolymer hydrous composition containing 0 to 10 parts by weight of said alcohol and 10 to 1000 parts by weight of water with respect to 100 parts by weight of the ethylene-vinylalcohol copolymer (step 1); cutting the ethylene-vinylalcohol copolymer hydrous composition in a molten state let out from said vessel in the step 1 to obtain ethylene-vinylalcohol copolymer hydrous composition pellets (step 2); introducing the ethylene-vinylalcohol copolymer hydrous composition pellets obtained in the step 2 into a dryer to reduce a water content of the pellets (step 3); melt-kneading the pellets, whose water content is reduced in the step 3, in an extruder (step 4); and cutting the ethylene-vinylalcohol copolymer discharged from the extruder in the step 4 to obtain the pellet of ethylene-vinyl alcohol copolymer (step 5)" (emphasis added). Ninomiya, Yamauchi and Kawahara 616 do not disclose or suggest such a process.

As indicated above, in step 1 of claim 1, an ethylene-vinyl alcohol (EVOH) copolymer solution containing 50 parts by weight or more of an alcohol having a boiling point of 100°C or less per 100 parts by weight of the ethylene-vinyl alcohol copolymer is introduced into a vessel; the solution is contacted with water vapor to release the alcohol; and an ethylene-vinyl alcohol copolymer hydrous composition is obtained containing 0 to 10 parts by weight of the alcohol and 10 to 1000 parts by weight of water per 100 parts by weight of the ethylene-vinyl alcohol copolymer.

Ninomiya discloses adding water to a methanol solution of EVOH to obtain an aqueous EVOH solution having a water-alcohol weight ratio of 80/20 to 5/95 and an EVOH

content of 20 to 55 wt%. *See* Ninomiya, paragraph [0031]. The lower limit of alcohol content in the EVOH solution of Ninomiya (i.e., when the EVOH content is 55 wt% and the water-to-alcohol weight ratio is 80/20) is 16 parts by weight per 100 parts by weight of EVOH. The resulting aqueous EVOH solution is brought into contact with a coagulating or solidifying medium containing water or water-alcohol mixed solvents, which causes the EVOH to precipitate out. *See* Ninomiya, paragraphs [0033] and [0034]. The aqueous EVOH solution is generally extruded into the coagulation bath in the form of a strand through a nozzle and, after precipitation, the strand is cut into pellet-like pieces. *See* Ninomiya, paragraph [0041].

The foregoing aspects of the method of Ninomiya are further evidenced in the Examples. In Example 1 of Ninomiya, 70 parts of 30% water-methanol at its azeotropic point is fed into an EVOH composition solution including 29% EVOH composition and 71% methanol to obtain a solution of the EVOH composition in a water/methanol mixture [water/methanol = 30/70 (by weight); resin concentration = 32%]. *See* Ninomiya, paragraph [0099]. The EVOH composition solution is then extruded in strand form into a coagulation medium composed of 95% water and 5% methanol, resulting in coagulation of the EVOH composition in strand form. *See* Ninomiya, paragraph [0100]. The strand-shaped EVOH composition is then cut with a cutter to give white porous pellets. *See* Ninomiya, paragraph [0101].

The above-described portions of the method of Ninomiya are asserted to correspond to step 1 (preparing hydrous composition) and step 2 (cutting the composition to obtain pellets) in claim 1. Before the EVOH composition in Ninomiya is cut, there is no instance in which the alcohol and water contents of the EVOH composition are brought within the ranges recited in claim 1 (0 to 10 parts alcohol, 10 to 1000 parts water). For example, as indicated above, the lower limit of alcohol content in the EVOH composition of Ninomiya before

cutting is 16 parts by weight, which is outside the range recited in claim 1. Ninomiya plainly does not disclose or suggest step 1 of claim 1.

The Office Action asserts:

> Ninomiya discloses placing EVOH solution into a vessel (saponification column, p 12 ln 12), contacting the solution with water in the vessel to let out said alcohol with water (p 5 ln 27-29) and then letting out from the vessel an EVOH copolymer hydrous composition containing as little as 5% water and no alcohol (p 7 ln 14-15), meeting the requirements set by the claim that the hydrous copolymer contain 10 to 1000 parts water and 0 to 10 parts alcohol.

*See* Office Action, pages 2 to 3. This explanation of the disclosure of Ninomiya is strained. At page 12, line 12, Ninomiya discloses adding ethylene-vinyl acetate (EVA) to a vessel, not EVOH. At page 5, lines 27 to 29, Ninomiya discloses extruding an EVOH composition into a coagulation bath (including water). However, this contact with water takes place after the EVOH composition is released from the extruder (corresponding roughly to step 2 of claim 1), not before (as in step 1 of claim 1). At page 7, lines 14 to 15, Ninomiya discloses drying EVOH pellets to have a water content of 5 to 60 wt%. This passage refers to drying already-formed pellets (corresponding to step 3 of claim 1). There is no indication in Ninomiya that an EVOH hydrous composition, before cutting to form pellets (as in step 1 of claim 1), is modified to have the alcohol and water contents required in claim 1.

Thus, each of the aspects of the disclosure of Ninomiya asserted to correspond to step 1 in claim 1 do not, in fact, so correspond.

With respect to Yamauchi, the Office Action asserts:

> However, Yamauchi teaches introducing the EVOH copolymer solution into a vessel and contacting the solution with water vapor in said vessel to let out said alcohol with water (col 21 ln 28-38). Steam is used so that the water might mix the methanol vapor (col 21 ln 30) to change the solvent composition (col 21 ln 34). Therefore it would have been obvious to an ordinary artisan to use water vapor in the method taught by Ninomiya because Yamauchi teaches using steam add water to the vaporous methanol solvent.

*See* Office Action, page 3. Yamauchi discloses a method for producing EVOH pellets as follows:

> Steam was then blown into the obtained EVOH solution in methanol to change the solvent composition of the solution into a mixed system of water and methanol. Then the solution was extruded into a bath comprising a 10% aqueous methanol solution at 5°C to form strands. The strands were coagulated and separated, and cut.

*See* Yamauchi, column 21, lines 32 to 38. The Office Action appears to assert that it would have been obvious to replace water, as in Ninomiya, with steam, as in Yamauchi. At the outset, it would be technically implausible to use steam as a coagulation bath. Accordingly, a skilled artisan would not replace the water referred to at page 5, lines 27 to 29 of Ninomiya with steam. However, even if steam were employed as the water that is added to obtain an aqueous EVOH solution prior to coagulation step in Ninomiya, neither Ninomiya nor Yamauchi discloses adjusting the alcohol content of the aqueous EVOH solution to include 0 to 10 parts by weight of alcohol per 100 parts by weight of EVOH. Yamauchi does not remedy the deficiencies of Ninomiya.

With respect to Kawahara 616, the Office Action asserts:

> Ninomiya does not teach cutting the EVOH copolymer hydrous composition in a molten state. However, Kawahara 616 teaches doing so to cut great quantities of polymer quickly and accurately. Therefore it would have been obvious to an ordinary artisan to hot-cut the fresh hydrous EVOH copolymer taught by Ninomiya because Kawahara 616 teaches doing so for increased efficiency, speed and accuracy.

*See* Office Action, page 3. As correctly pointed out in the Office Action, Kawahara 616 discloses melt-kneading, extruding and cutting an EVOH polymer. *See* Kawahara 616, paragraph [0060]. However, the material that is subjected to melt-kneading, extruding and cutting is, e.g., "a pellet obtained by cutting strand precipitated in a coagulation bath." *See* Kawahara 616, paragraph [0060]. That is, the cutting referred to in the Office Action is

cutting as in step 5 of claim 1, not cutting as in step 2 of claim 1. Neither Ninomiya nor Kawahara 616 discloses or suggests cutting the EVOH hydrous composition of claim 1 in a molten state. That is, neither Ninomiya nor Kawahara 616 discloses or suggests cutting an EVOH hydrous composition including 0 to 10 parts by weight of the alcohol and 10 to 1000 parts by weight of water, in a molten state.

Further, if the cutting that takes place in Kawahara 616 were interpreted as corresponding to the cutting in step 2 of claim 1, the "vessel" of claim 1 would have to be an extruder. The material added to the "vessel" in claim 1 is an EVOH solution including 50 parts by weight or more of alcohol having a boiling point of 100°C or less per 100 parts by weight of EVOH. There is no indication in Kawahara 616 that an EVOH solution, much less a solution having such the composition recited in claim 1 (at least 50 parts alcohol) should used as a starting material in the extruder.

Kawahara 616 does not remedy the deficiencies of Ninomiya.

At least because none of Ninomiya, Yamauchi and Kawahara 616 discloses or suggests a method in which an EVOH solution containing 50 parts by weight or more of an alcohol having a boiling point of 100°C or less per 100 parts by weight of EVOH is contacted with water vapor to obtain an EVOH hydrous composition containing 0 to 10 parts by weight of the alcohol and 10 to 1000 parts by weight of water per 100 parts by weight of EVOH, the combination of references fails to disclose or suggest each and every feature of claim 1.

As explained, claim 1 would not have been rendered obvious by Ninomiya, Yamauchi and Kawahara 616. Claims 2, 3, 8-13 and 16 depend from claim 1 and, thus, also would not have been rendered obvious by Ninomiya, Yamauchi and Kawahara 616. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Ninomiya, Yamauchi, Kawahara 616 and Kawahara 546

The Office Action rejects claim 6 under 35 U.S.C. §103(a) over Ninomiya in view of Yamauchi, Kawahara 616 and EP 1 179 546 A1 to Kawahara et al. ("Kawahara 546"). Applicants respectfully traverse the rejection.

As explained, claim 1 would not have been rendered obvious by Ninomiya, Yamauchi and Kawahara 616. Claim 6 depends from claim 1 and, thus, also would not have been rendered obvious by Ninomiya, Yamauchi, Kawahara 616 and Kawahara 546 for at least the reasons discussed above with respect to claim 1. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For the foregoing reasons, Applicants submit that claims 1-3, 5, 6 and 8-25 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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